IRC-7

Log # 10-20
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WASHINGTON STATE BUILDING CODE COUNCIL

APPLICATION FOR REVIEW OF A PROPOSED STATEWIDE AMENDMENT TO THE WASHINGTON STATE BUILDING CODE

1. State Building Code to be Amended.

- [ ] International Building Code
- [X] International Residential Code
- [ ] ICC ANSI A117.1 Accessibility Code
- [ ] International Fire Code
- [ ] Uniform Plumbing Code
- [ ] State Energy Code
- [ ] Ventilation and Indoor Air Quality Code
- [ ] International Mechanical Code
- [ ] International Fuel Gas Code
- [ ] NFPA 54 National Fuel Gas Code
- [ ] NFPA 58 Liquefied Petroleum Gas Code

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2. Applicant:

Annie O'Rourke

3. Signed:

Annie O'Rourke _____ 2/28/10
Proponent Title Date

4. Contact Person:

Annie O'Rourke _____
Name **Title**

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SBCC

Chapter 4 - Foundations

Section 401 General
- R401.1 Application
- R401.2 Requirements
- R401.3 Drainage

Section 402 Soils and Slopes
- R402.1 Soils tests
  - R402.1.1 Expansive soils
    - R402.1.1.1 Expansive soils classifications
  - R402.1.2 Compressive or shifting soils
  - R402.1.3 Presumptive Load Bearing Values
- R402.2 Construction on or adjacent to slopes
  - R402.2.1 Building clearance from ascending slopes
  - R402.2.2 Footing setback from descending slop surfaces
  - R402.2.3 Foundation elevation
  - R402.2.4 Alternate setback and clearances

Section 403 Materials
- R403.1 Concrete
- R403.2 Wood
  - R403.1.1 Fasteners
  - R403.1.2 Wood Treatment
- R403.3 Precast Concrete

Section 404 Footings
- R404.1 General
- R404.2 Footings for Concrete and Masonry foundations
  - R404.2.1 Minimum Size
  - R404.2.2 Continuous Footing in Seismic Design D0, D1 and D2
  - R404.2.3 Seismic Reinforcing
  - R404.2.4 Footings with stem walls
  - R404.2.5 Slab-on-ground with turned down footing
  - R404.2.6 Minimum Depth
    - R404.2.6.1 Frost Protection
    - R404.2.6.2 Seismic Conditions
  - R404.2.7 Slope
- R404.3 Footings for wood foundations
- R404.4 Footings for precast concrete foundation
- R404.5 Frost protected shallow foundations
  - R404.5.1 Foundation adjoining frost protected shallow foundations
    - R404.5.1.1 Attachment to unheated structure
    - R404.5.1.2 Attachment to heated structure
  - R404.5.2 Protection of horizontal insulation below ground
  - R404.5.3 Drainage
  - R404.5.4 Termite damage

Section 405 Foundation Wall Systems

- R405.1 Concrete foundation walls
  - R405.1.1 Design of Concrete Foundation Walls
    - R405.1.1.1 Cross Section
    - R405.1.1.2 Reinforcement
      - R405.1.1.2.1 Support of above-grade concrete walls
      - R405.1.1.2.2 Support of light-frame construction walls
    - R405.1.1.3 Concrete, Materials for concrete and forms
      - R405.1.1.3.1 Compressive Strength
      - R405.1.1.3.2 Concrete mixing and delivery
      - R405.1.1.3.3 Maximum aggregate size
      - R405.1.1.3.4 Proportioning and slump of concrete
      - R405.1.1.3.5 Consolidation of concrete
      - R405.1.1.3.6 Form materials and form ties
        - R405.1.1.3.6.1 Stay-in-place forms
      - R405.1.1.3.7 Reinforcement
        - R405.1.1.3.7.1 Steel Reinforcement
        - R405.1.1.3.7.2 Location of reinforcement
        - R405.1.1.3.7.3 Wall openings
        - R405.1.1.3.7.4 Support and Cover
        - R405.1.1.3.7.5 Lap splices
        - R405.1.1.3.7.6 Alternate grade of reinforcement and spacing
        - R405.1.1.3.7.7 Standard Hooks
        - R405.1.1.3.7.8 Construction joint reinforcement
      - R405.1.1.3.8 Exterior Wall Coverings
  - R405.1.2 Design required
  - R405.1.3 Additional Seismic Requirements
  - R405.1.4 Foundation wall thickness
  - R405.1.5 Height above finished grade
  - R405.1.6 Backfill Placement
- R405.2 Masonry foundation walls
  - R405.2.1 Design of masonry foundation walls
    - R405.2.1.1 Masonry foundation walls
    - R405.2.1.2 Rubble stone masonry foundation walls
  - R405.2.2 Design required
  - R405.2.3 Additional Seismic Requirements
  - R405.2.4 Foundation wall thickness
  - R405.2.5 Height above finished grade
  - R405.2.6 Backfill Placement
- R405.3 Wood Foundation Walls
  - R405.3.1 Identification
  - R405.3.2 Stud Size
  - R405.3.3 Height and Backfill
  - R405.3.4 Backfilling
  - R405.3.5 Drainage and damp proofing
  - R405.3.6 Fastening
- R405.4 Precast Concrete Foundation Walls
  - R405.4.1 Design
  - R405.4.2 Precast concrete foundation design drawings
  - R405.4.3 Identification
- R405.5 Pier and Curtain Wall Foundations
- R405.6 Retaining Walls

Section 406 Foundation Anchorage
- R406.1 Wood Sill Plates
- R406.2 Foundation Anchorage
- R406.3 Additional Seismic Requirements

Section 407 Foundation Drainage
- R407.1 Concrete and Masonry Foundations
- R407.2 Wood Foundations
  - R407.2.1 Base
  - R407.2.2 Vapor Retarder
  - R407.2.3 Drainage System
- R407.3 Precast Concrete Foundations

Section 408 Foundation Damp proofing and Waterproofing
- R408.1 Concrete and Masonry Foundation Dampproofing
- R408.2 Concrete and Masonry Foundation Waterproofing
- R408.3 Wood Foundation Dampproofing
  - R408.3.1 Panel joints sealed
  - R408.3.2 Below-grade moisture barrier
  - R408.3.3 Porous fill
  - R408.3.4 Backfill
- R408.4 Precast Concrete Foundation Dampproofing
  - R408.4.1 panel joints sealed

Section 409 Columns
- R409.1 Wood Column protection
- R409.2 Steel Column Protection
- R409.3 Structural Requirements

Section R410 Under-Floor Space
- R410.1 Ventilation
  - R410.1.1 Openings for under-floor ventilation
- R410.2 Unvented crawl space
- R410.3 Access
- R410.4 Removal of Debris
- R410.5 Finished Grade
- R410.6 Flood Resistance

The goal here was to restructure Chapter 4 in a more logical manner. Below is a list of significant reorganizational changes. No content changes are proposed in this revision.

Separate section for soils and slopes – By locating all soils and slope issues in the same section one can locate the needed information quickly at the beginning of the chapter. In addition, the expansive soils portion, currently located at the end of the footing section, seems more appropriately placed in the soils section at the front.

Some Title Changes – The changes were an attempt to make the chapter more consistent with other sections of the code.

Lists are ordered in the same manner in each section – Whether you are looking for footing information, foundation information or damp proofing information, the list begins with concrete then masonry, followed by wood and finally precast concrete.

Separate section for foundation anchorage – The anchorage requirements were located in the footing section and an obscure reference to wood sill plates following wood foundation wall section.

Separated masonry & concrete foundations in a section entitled Foundation Wall Systems – Originally masonry and concrete foundation walls were together. To complete the masonry requirements one had to jump 10 pages to locate the next required section.

While no content change is proposed here, there are 21 different phrases and clauses used to describe foundation walls. I believe that number can be effectively reduced to 12, without loss of understanding.

EXISTING

Foundation walls
Concrete foundation walls
Masonry foundation walls
Precast concrete foundation walls
Clay and masonry foundation walls
Basement walls
Flat basement walls
Concrete basement walls
Waffle-grid basement walls
Screen-grid basement walls
Flat concrete basement walls
Concrete walls
Rubble stone masonry walls
Above grade concrete walls
Retaining walls
Stem walls
Concrete stem walls
Foundation stem walls
Concrete foundation stem walls
Wood foundation walls
Pier and curtain wall foundations

PROPOSED

Foundation walls
Concrete foundation walls
Masonry foundation walls
Precast concrete foundation walls
Rubble stone foundation walls
Wood foundation walls

Basement walls
Concrete basement walls
Waffle-grid basement walls
Screen-grid basement walls

Retaining Walls
Pier and Curtain Wall Foundations

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Economic Impact Worksheet
(Required for statewide amendment requests. Attach supporting documentation.)

Code References: 2009 IRC Title: Chapter 4
Proponent: Anne O'Rourke Phone 360 417-5615 Date: 2.28.10

Part I ❖ Amendment Benefit:

PROBLEM(S) ADDRESSED: Re organization of Chapter 4

PRIMARY REASON FOR AMENDMENT: (check one only)
- ☐ Protect public health, safety and welfare
- ☐ Reduce cost
- ☐ "Manage risk" for government
- ☐ Mandate from legislation or courts
- ☐ Code change
- ☒ Other Re organization

TYPE OF BENEFITS PROJECTED: (check all that apply)
- ☐ Saves lives/reduces injuries
- ☐ Protects/improves long-term health
- Reduces construction cost:
  - ☐ Over existing code requirement
  - ☐ Canceling new code requirement
  - ☐ Off-setting new code requirement
- ☐ Increases construction alternatives
- ☐ Saves energy
- ☐ Protects environment
- ☐ Increases accessibility
- ☐ Reduces regulation
- ☐ Reduces government enforcement cost
- ☒ Clarifies/improves existing code
- ☐ Protects property loss/damage
- ☒ Other time saving

Part II ❖ Amendment Impacts:

TYPES OF CONSTRUCTION: ☒ New Construction ☒ Remodeling/Tenant Improvement/Repair

COMPLETE TABLE FOR EACH BUILDING TYPE CHECKED (See reverse for instruction on items [a] through [e])

√	Building Type	Construction[a] 1st Cost		Enforcement[b]		Owner[c] Ongoing		Other		Supporting data attached
	Residential	C/S[d]	Degree[e]	C/S[d]	Degree[e]	C/S[d]	Degree[e]	C/S[d]	Degree[e]	
✓	Single family	–	0	–	0	–	0			✓
	Multi-family									
	Commercial/Retail									
	Industrial									
	Government/Utilities									
	Other:									

OTHER EFFECTS:

Evaluate by number scale 0-3 (0=none, 3=significant)
- 0 Likelihood for litigation
- 0 Decrease public cooperation
- 0 Disadvantage small business
- ___ Other ___

Evaluate by letter code
(Spec, Custom, Factory, Remodel, Manufact., Other, NA)
- N/A Advantage one industry
- N/A Disadvantage one industry

Part III ❖ Comments and Recommendations:

Evaluate each by number scale 0-3 (0=none, 3=significant)
- 0 Difficulty to Enforce
- 0 Costs exceed Benefits
- 0 C/S Confidence level
- 0 Cost of not adopting amendment
- 0 Degree of TAG controversy

Evaluate Yes or No (circle one)
- (Y) / N Were alternative solutions considered
- (Y) / N Recommend further benefit/impact analysis
- (Y) / N Recommend future benefit/impact review